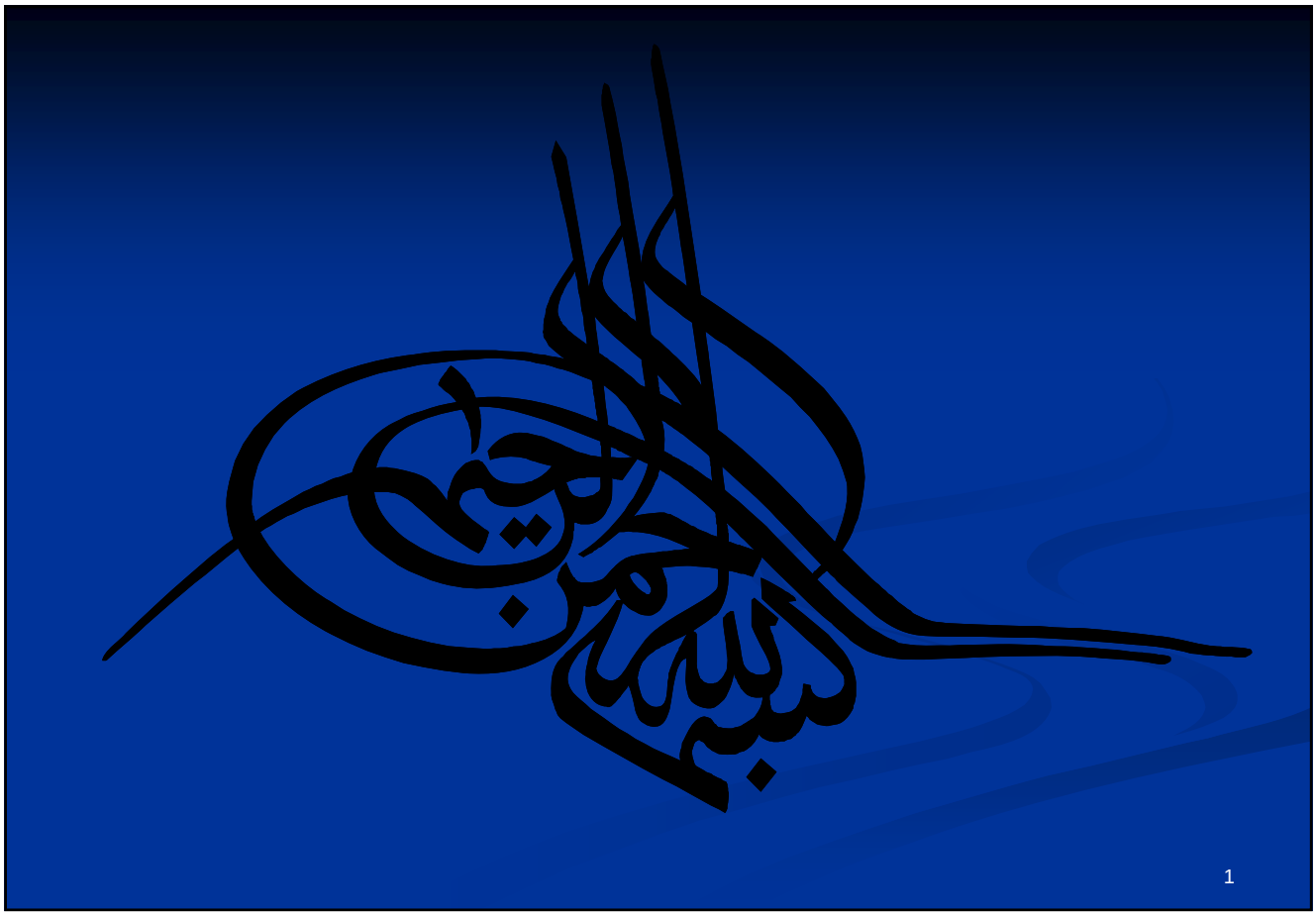
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OVERVIEW OF EXTERNAL QUALITY ASSESSMENT

S.Amini

TB Lab Expert H.R.L (M.O.H)

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Content Overview

- What is EQA?
- EQA for AFB Smear Microscopy
  - Panel testing
  - Blinded rechecking
  - On-site evaluation
- Advantages and disadvantages of EQA methods
- Identification of the most feasible EQA method for a country

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External Quality Assessment (EQA)

- A system for objectively checking the laboratory's performance using an external agency or facility
- Ensures customers (physicians, patients and health authorities) that the laboratory can produce reliable results
- An indispensable part of a laboratory quality management system

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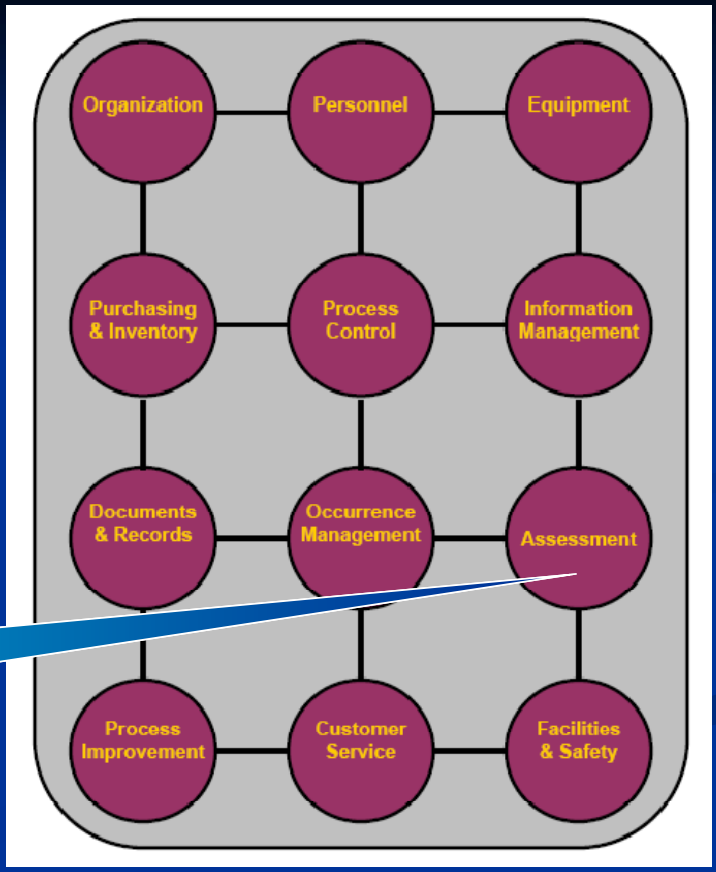
The Quality System

Quality System Essentials (QSE)

Set of coordinated activities that function as building blocks for quality management

EXTERNAL QUALITY ASSESSMENT



ISO 15189:2007
Requirements Regarding EQA

- The laboratory should participate in interlaboratory comparisons such as those organized by EQA schemes
- The lab management shall monitor the results of EQA and participate in the implementation of corrective actions

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EQA Benefits

- Allows inter-lab comparison of performance
- Serves as an early warning system
- Identifies systematic problems
- Provides objective evidence of laboratory quality
- Serves as an indicator for focusing improvement efforts
- Identifies training needs
- Source of continuing education
- Source of material for practice

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EQA Methods for AFB Smear Microscopy

External Quality Assessment (EQA) –

a process to assess laboratory performance; allows to assess labs' capabilities and performances by comparing their results with those obtained in other labs in the network

- **Panel testing**
- **Blinded rechecking**
- **On-site supervision**

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Panel Testing Process

- NRL sends out sets of stained and/or unstained sputum smears for testing
- Laboratory technicians analyze smears and return results to NRL
- Results are evaluated, scores are sent to participants
- Appropriate corrective actions are undertaken (and documented), if needed

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Blinded Rechecking

- Random sampling of routine slides from a peripheral laboratory for rechecking by a higher-level laboratory
- The widely used system for rechecking of “10% of negative and 100% of positive smear” is no more recommended
- The proposed blinded rechecking method is based on the Lot Quality Assurance System (LQAS)

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On-Site Supervision

- Periodic visits to the laboratory to assess laboratory practices to:
  - Obtain a realistic picture of laboratory practices
  - Provide assistance with problem areas, including training
- Laboratory vs. TB supervisors
- When planning site visits, to consider:
  - Frequency
  - Use of checklists
  - Follow-up visits
    - Monitoring corrective actions
    - Training

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EQA methods: Which one is better?

- Advantages and drawbacks for all types
- Influencing factors:
  - NTP goals set up for laboratory services development
  - TB prevalence in the country
  - Centralization / decentralization of health services
  - Resources available and projected
    - Cost, time
    - Logistical questions

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Panel Testing

ADVANTAGES	DISADVANTAGES:
• Low workload for a peripheral center • Improves laboratory credibility • Rapid response countrywide possible • Use of stained and unstained smears can help to identify the source of a problem • May lead to identification of faulty equipment	• Does not measure routine performance • High workload for NRL • May not be motivating to improve daily performance

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Blinded Rechecking

ADVANTAGES	DISADVANTAGES:
•Low workload for a peripheral laboratory •Motivates to improve daily performance •Reflects reality of routine performance	•Higher workload for a higher level center •Needs close adherence to elaborated procedures •Can not be used with very low positivity rates

Indications for use:

- The best method for evaluating lab performance
- Countrywide
- Ongoing and permanent

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On-Site Supervision

ADVANTAGES	DISADVANTAGES:
• Direct personal contact • Motivating to staff • Observation of actual work • Identifies causes of errors • Permits verification of equipment quality and function	• Usually poor coverage • Labor intensive • Costly • Needs very good supervisors

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EQA: Important Issue

Blinded rechecking or panel testing should be complemented by very targeted problem-oriented supervision conducted by a trained staff

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Key Messages (I):

- EQA can be defined as a system for objectively checking the laboratory's performance using an external agency or facility
- EQA for AFB smear microscopy allows participating laboratories to access their capabilities and performances by comparing their results with those in other laboratories in the network
- EQA for AFB sputum smear microscopy include three methods:
  - Panel testing
  - Blinded rechecking
  - On-site supervision

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